

**The Kansas Information Technology Architecture
Service Platform and Infrastructure
Revised 06/20/2023**

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6.5.5 Wireless Networks

A network that interconnects devices over a geographically small area, typically in one building or a part of a building.

Media Installation	Products	Standards
Target	BICSI Telecommunications Distribution Methods Manual (TDMM)	ANSI/TIA/EIA-568
Any new installations should use the current highest standard to allow for future growth.		
Emerging		
Current	BICSI Telecommunications Distribution Methods Manual (TDMM)	ANSI/TIA/EIA-568
Twilight		

Media - Copper	Products	Standards
Target		Category 6A Category 6E
Any new copper runs should use the current highest standard to allow for future growth.		
Emerging		Category 7 Category 8
Current		Category 5E Category 6 Category 6E
Twilight		Category 5 Coax Twinax Category 3

Media - Fiber		
	Products	Standards
Target		1000Base-SX (Multi-mode) 1000Base-LX (Multi-mode) 1000Base-LX(Single-mode) 1000Base-LH (Single-mode)
Any new fiber runs should use the current highest standard to allow for future growth.		
Emerging		10GBase-SR 10GBase-LR 10GBase-R 10GBase-T
Current		100Base-FX (Multi-Mode) 100Base-SX (Multi-Mode) 100Base-LX (Single-Mode) 1000Base-SX (Multi-mode) 1000Base-LX (Multi-mode) 1000Base-LX(Single-mode) 1000Base-LH (Single-mode)
Twilight		10Base-FL

Wireless		
	Products	Standards
Target	Aruba Access Points Cisco Access Points	802.11ac 802.11ax (WiFi 6 & 6e)
Emerging		IEEE 802.11 be (WIFI 7)802.11bf (IoT devices)
Current	Aruba Access Points Cisco Access Points Ubiquiti Access Points	IEEE 802.11 ac IEEE 802.11 ax (WIFI 6 & 6e) Point to Point Wireless
Twilight		WiMAX Vendor Proprietary IEEE 802.11b

Wireless Security	Products	Standards
Target		WPA3-Enterprise WPA3-PSK 802.1x EAP-TLS
Emerging		
Current		WPA3-SAE (Personal) WPA2-PSK WPA2-Enterprise 802.1x EAP-TLS
Twilight		WEP WPA WPA2-PSK WPA2-Enterprise

Topology	Products	Standards
Target		CSMA/CD Mesh
Emerging		Point-to-Multi-Point
Current		Mesh Point-To-Point
Twilight		Bus Ring

OSI Layer 1	Products	Standards
Target		1000BaseT Ethernet
Agencies need to consider their speed requirements when determining Layer 1 materials. Refer to industry best practices when choosing media type.		
Emerging		10GB BaseT Ethernet
Current		100BaseT Ethernet 1000BaseT Ethernet
Twilight		Repeaters Concentrators Hubs 10Base2 and 10BaseT Ethernet

OSI Layer 2		
	Products	Standards
Target	Cisco Aruba Juniper	IEEE 802.1 IEEE 802.3
Emerging		Applications Centric Infrastructure (ACI)
Current	Cisco Dell Brocade Juniper	IEEE 802.1 Bridging IEEE 802.3 Ethernet VLANs (IEEE 802.1q) Spanning Tree
Twilight	3COM Enterasys Netgear Linksys	Bridges/Hubs Token Ring NetBEUI NetBIOS IPX/SPX

OSI Layer 3		
	Products	Standards
Target		TCP / Internet Protocol v4 TCP / Internet Protocol v6 Voice over Internet Protocol (VoIP)
Emerging		TCP / Internet Protocol v6
Current		TCP / Internet Protocol v4 Session Initiation Protocol (SIP) Voice over Internet Protocol (VoIP) BGP, OSPF, EIGRP MPLS, GET VPN IPSec Apple Airplay
Twilight		VTP DECnet Appletalk IPX/SPX

Identity Services	Products	Standards
Target	Cisco Identity Services Engine (ISE) Cisco Security Group Tag (SGT) Aruba ClearPass	Single sign on Active Directory 802.1x Biometric Authentication
Identity services should enforce network segmentation and access control policies.		
Emerging		FIDO Passkey
Current	Cisco Identity Services Engine (ISE) Cisco Security Group Tag (SGT) Aruba ClearPass	RADIUS Microsoft Network Policy Server (NPS) LDAP Active Directory Multi-factor identification (MFA) Network Access Control (NAC) 802.1x TACACS+ with AAA Single sign on Certificate based authentication Token based authentication Biometric authentication
Twilight		

IoT Network Protocols	Products	Standards
Target		
Considerations in emerging standards include embedded encryption, bandwidth, speed, and device power consumption.		
Emerging		5G – converged wireless and cellular Matter
Current		Zigbee LoRaWAN Bluetooth NB IoT LTE CAT 1, M1 Near Field Communication (NFC)
Twilight		
Restricted???		National Security Banned?? (entity list from the US Dept of Commerce)

Wireless Network Monitoring Tools	Products	Standards
Target	Cisco DNA Center SolarWinds Aruba Clearpass	SNMP v3 ICMP Netflow
Emerging	Cisco DNAC Aruba Central	ICMP sFlow
Current	HP Network Node Manager (NNMi), Cisco Prime SolarWinds Aruba Clearpass	SNMP v3 ICMP SNMP v2
Twilight	Plixer Scrutinizer	HTTP ICMP SNMP v1

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